CLAIMS

What is claimed is:

1. A base-station transceiver system (BTS) operative in a cellular telephone network, comprising:

a main up-link port and a diversity up-link port which are adapted to operate cooperatively to receive up-link signals over-the-air from cellular telephones such that both of the ports receive the up-link signals from each of the cellular telephones, and which are coupled to receive signals from wired telephones, such that the main up-link port receives signals only from a first group of the wired telephones and the diversity up-link port receives signals only from a second group of the wired telephones; and

signal processing circuitry which is adapted to receive the signals from the up-link ports and convey the signals over the network.

2. The BTS according to claim 1, wherein the wired telephones are connected by wire to a cable television (CATV) network, and wherein the signals from the first and the second group of wired telephones are conveyed to the main up-link port and the diversity up-link port via the CATV network.

3. The BTS according to claim 2, wherein the main up-link port and the diversity up-link port are coupled by wires to the CATV network so as to receive the signals from the wired telephones.

4. The BTS according to claim 2, and comprising:

a first duplexer which is adapted to receive the signals from the first group of wired telephones and to convey the signals to the main up-link port;

a second duplexer which is adapted to receive the signals from the second group of wired telephones and to convey the signals to the diversity up-link port; and

a down-link port which is adapted to convey down-link signals via the first duplexer and the CATV network to the first group of wired telephones and via the second duplexer and the CATV network to the second group of wired telephones.

5. The BTS according to claim 2, and comprising

a first down-link port which is adapted to transmit first down-link signals to the cellular telephones;

a further main up-link port and a further diversity up-link port which are adapted to operate cooperatively to receive up-link signals over-the-air from cellular telephones such that both of the ports receive the up-link signals from each of the cellular telephones, and which are coupled to receive signals from the wired telephones, such that the further main up-link port receives signals only from a third group of the wired telephones and the further diversity up-link port receives signals only from a fourth group of the wired telephones;

a second down-link port which is adapted to transmit second down-link signals to the cellular telephones; and

a four-way splitter, which is adapted to receive the first and the second down-link signals and is coupled to distribute the first and the second down-link signals to the first, second, third, and fourth group of the wired telephones.

6. The BTS according to claim 5, wherein the four-way splitter comprises an existing four-way splitter operative in the CATV network to convey CATV signals to a first, a second, a third, and a fourth group of CATV receiver locations, and wherein locations of the first, second, third, and fourth group of the wired telephones respectively correspond to the first, second, third, and fourth group of CATV receiver locations.

7. The BTS according to claim 6, and comprising first, second, third, and fourth return path receivers (RPRs) which are respectively coupled to the first, second, third, and fourth group of the wired telephones so as to convey cellular up-link signals therefrom respectively to the main up-link port, the diversity up-link port, the further main up-link port, and the further diversity up-link port.

8. The BTS according to claim 7, wherein the RPRs are adapted to convey up-link CATV signals to the CATV network.

9. The BTS according to claim 1, wherein the signals comprise radio frequency (RF) signals, and comprising a BTS converter (BTSC) which is adapted to convert intermediate frequency (IF) signals received from the wired telephones to the RF signals.

10. The BTS according to claim 9, wherein the IF signals are transmitted via a CATV network, and wherein a level of the IF signals is less than or equal to a threshold

level of signals in the CATV network.

11. The BTS according to claim 10, wherein the IF signals are transmitted within an overall IF bandwidth, and wherein the first group of telephones comprises a first telephone which transmits within a first IF bandwidth narrower than the overall IF bandwidth and a second telephone which transmits within a second IF bandwidth narrower than the overall IF bandwidth.

12. The BTS according to claim 11, wherein the first IF bandwidth is approximately the same as the second IF bandwidth.

13. The BTS according to claim 11, wherein the first IF bandwidth and the second IF bandwidth comprise different frequencies.

14. The BTS according to claim 1, wherein at least one of the wired telephones comprises a baseband-telephone which receives and transmits baseband signals, and a telephone adapter which is connected to the baseband-telephone and which is adapted to convert between the baseband signals and the signals received by the main up-link port and the diversity up-link port.

15. A method for conveying signals in a cellular telephone network, comprising:

coupling a main up-link port and a diversity up-link port of a base-station transceiver system (BTS) to receive up-link signals from wired telephones so that the main up-link port receives signals only from a first group of the wired telephones operative in a cellular telephone network and the diversity up-link port receives signals only from a second group of the wired telephones operative in the cellular telephone network, the main up-link port and the diversity up-link port being adapted to operate cooperatively to receive up-link signals over-the-air from cellular telephones such that both of the ports receive the up-link signals from each of the cellular telephones; and

receiving the signals from the up-link ports and conveying the signals to the network.

16. The method according to claim 15, wherein the wired telephones are connected by wire to a cable television (CATV) network, and wherein the signals from the first and the second group of wired telephones are conveyed to the main up-link port and the diversity up-link port via the CATV network.

17. The method according to claim 16, wherein coupling the main up-link port and the diversity up-link port comprises coupling the ports by wires to the CATV network so as to receive the signals from the wired telephones.

18. The method according to claim 16, and comprising:

receiving the signals from the first group of wired telephones in a first duplexer and conveying the signals to the main up-link port;

receiving the signals from the second group of wired telephones in a second duplexer and conveying the signals to the diversity up-link port; and

conveying down-link signals via the first duplexer and the CATV network to the first group of wired telephones and via the second duplexer and the CATV network to the second group of wired telephones.

19. The method according to claim 16, and comprising

transmitting first down-link signals from a down-link port to the cellular telephones;

coupling a further main up-link port and a further diversity up-link port of the BTS to receive up-link signals from wired telephones so that the further main up-link port receives signals only from a third group of the wired telephones operative in the cellular telephone network and the diversity up-link port receives signals only from a fourth group of the wired telephones operative in the cellular telephone network, the further main up-link port and the further diversity up-link port being adapted to operate cooperatively to receive up-link signals over-the-air from cellular telephones such that both of the ports receive the up-link signals from each of the cellular telephones; and

receiving the first and the second down-link signals in a four-way splitter which is coupled to distribute the first and the second down-link signals to the first, second, third, and fourth group of the wired telephones.

20. The method according to claim 19, wherein the four-way splitter comprises an existing four-way splitter operative in the CATV network to convey CATV signals to a first, a second, a third, and a fourth group of CATV receiver locations, and wherein locations of the first, second, third, and fourth group of the wired telephones respectively correspond to the first, second, third, and fourth group of CATV receiver locations.

21. The method according to claim 20, and comprising coupling first, second, third, and fourth return path receivers (RPRs) respectively to the first, second, third, and fourth group of the wired telephones so as to convey cellular up-link signals therefrom respectively to the main up-link port, the diversity up-link port, the further main up-link port, and the further diversity up-link port.

22. The method according to claim 21, wherein the RPRs are adapted to convey up-link CATV signals to the CATV network.

23. The method according to claim 15, wherein the signals comprise radio frequency (RF) signals, and comprising converting intermediate frequency (IF) signals received from the wired telephones to the RF signals.

24. The method according to claim 23, wherein the IF signals are transmitted via a CATV network, and wherein a level of the IF signals is less than or equal to a threshold level of signals in the CATV network.

25. The method according to claim 24, wherein the IF signals are transmitted within an overall IF bandwidth, and wherein the first group of telephones comprises a first telephone which transmits within a first IF bandwidth narrower than the overall IF bandwidth and a second telephone which transmits within a second IF bandwidth narrower than the overall IF bandwidth.

26. The method according to claim 25, wherein the first IF bandwidth is approximately the same as the second IF bandwidth.

27. The method according to claim 25, wherein the first IF bandwidth and the second IF bandwidth comprise different frequencies.

28. The method according to claim 15, wherein at least one of the wired telephones comprises a baseband-telephone which receives and transmits baseband signals, and a telephone adapter which is connected to the baseband-telephone and which is adapted to convert between the baseband signals and the signals received by the main up-link port and the diversity up-link port.

29. A telephone adapter, comprising:

converter circuitry which is adapted to convert between cellular signals and baseband signals, the cellular signals comprising a first signal communicating with a

main up-link port of a base-station transceiver system (BTS) operative in a cellular telephone network, and a second signal communicating with a diversity up-link port of the BTS;

a switch unit which is adapted to connect to a wired telephone and to convey the baseband signals between the wired telephone and the converter circuitry; and

a control which sets the converter circuitry to convey only one of the first and the second signals,

so that in a first setting of the control the wired telephone communicates only with the main up-link port, and in a second setting of the control the wired telephone communicates only with the diversity up-link port.

30. A method for transmitting signals, comprising:

converting in converter circuitry between cellular signals and baseband signals, the cellular signals comprising a first signal communicating with a main up-link port of a base-station transceiver system (BTS) operative in a cellular telephone network, and a second signal communicating with a diversity up-link port of the BTS;

conveying the baseband signals between a wired telephone and the converter circuitry; and

setting the converter circuitry to convey only one of the first and the second signals,

so that in a first setting the wired telephone communicates only with the main up-link port, and in a second setting the wired telephone communicates only with the diversity up-link port.